

CLAIMS

1. An optimization method for optimizing an order of component mounting in a component mounting system having a plurality of mounters for mounting components on a board,
5 wherein a plurality of patterns having the same component placement structure is included in the board, said plurality of patterns corresponding respectively to a plurality of sub-boards obtained by partitioning said board, and
10 the optimization method comprises an allocation step of allocating each of the plurality of patterns to any of the plurality of mounters for component mounting.
2. The optimization method according to Claim 1, further
15 comprises a step of optimizing the order of component mounting for any one pattern among the plurality of patterns.
3. The optimization method according to Claim 1,
wherein the allocation step includes:
20 a pattern number determination step of determining, from a total number of the patterns included in the board and a number of the mounters, a number of patterns to be allocated to each of the mounters so that the number of patterns is approximately even; and
25 a pattern allocation step of allocating the determined number of patterns to any of the plurality of mounters for component mounting.
4. The optimization method according to Claim 3,
wherein the pattern number determination step includes:
30 a step of calculating a quotient and a remainder by dividing the total number of the patterns included in the board by the number of mounters;

a step of determining the quotient as the number of patterns to be allocated, in the case where the remainder is zero; and

5 a step of i) determining a number, which is the quotient plus one, as the number of patterns to be allocated to the same number of mounters as the remainder, starting from the mounter in a process farthest upstream, and ii) determining the quotient as the number of patterns to be allocated to the rest of the mounters, in the case where the remainder is one or greater.

10 5. The optimization method according to Claim 3,
wherein the pattern number determination step includes:
a step of calculating a quotient and a remainder by dividing
the total number of the patterns included in the board by the number
of mounters; and

15 a first allocation sub-step of determining the quotient as the
number of patterns to be allocated to each of the mounters.

6. The optimization method according to Claim 5,
wherein the pattern number determination step further
20 includes a second allocation sub-step of determining the remainder
as the number of patterns to be commonly allocated to the plurality
of mounters.

7. The optimization method according to Claim 6,
25 wherein in the second allocation sub-step, the number of
patterns to be commonly allocated to the plurality of mounters is
determined so that a time for component mounting for each of the
mounters is approximately even.

30 8. The optimization method according to Claim 6,
wherein in the pattern allocation step, the patterns to be
commonly allocated to the plurality of mounters are located in

positions in the board on which components can be mounted by said plurality of mounters.

9. The optimization method according to Claim 6,
5 wherein the plurality of mounters is all of the mounters included in the component mounting system.

10. The optimization method according to Claim 3,
wherein in the pattern allocation step, the determined
10 number of patterns are allocated to each of the mounters, as the patterns on which components are to be mounted, so that borders between the determined number of patterns allocated to each of the mounters are set orthogonally to a direction in which the board moves.

15 11. The optimization method according to Claim 1, further comprises a step of determining a position of the board during component mounting so that a moving distance, from a default position to the allocated pattern, of a head of each of the mounters
20 is uniform for all of said mounters, the head being used for mounting components on the board.

12. The optimization method according to Claim 1, further comprises a step of determining placement positions of component
25 cassettes used in component mounting so that a distance from the placement positions of the component cassettes to the allocated pattern, for each of the mounters is uniform for all of said mounters.

30 13. A program for a component mounting system having a plurality of mounters for mounting components on a board,
wherein a plurality of patterns having the same component placement structure is included in the board, said plurality of

patterns corresponding respectively to a plurality of sub-boards obtained by partitioning said board,

the program causing a computer to execute an allocation step of allocating each of the plurality of patterns to any of the plurality of mounters for component mounting.

14. A computer-readable recording medium on which a program for a component mounting system is recorded, the component mounting system having a plurality of mounters for mounting components on a board,

wherein a plurality of patterns having the same component placement structure is included in the board, said plurality of patterns corresponding respectively to a plurality of sub-boards obtained by partitioning said board, and

15. the program causes a computer to execute an allocation step of allocating each of the plurality of patterns to any of the plurality of mounters for component mounting.

15. A mounter for mounting components on a board according to a mounting order optimized through an optimization method for optimizing an order of component mounting in a component mounting system having a plurality of mounters for mounting components on a board,

25. wherein a plurality of patterns having the same component placement structure is included in the board, said plurality of patterns corresponding respectively to a plurality of sub-boards obtained by partitioning said board,

the optimization method includes an allocation step of allocating each of the plurality of patterns to any of the plurality of mounters for component mounting.

16. An optimization apparatus for optimizing an order of

component mounting in a component mounting system having a plurality of mounters for mounting components on a board,

wherein a plurality of patterns having the same component placement structure is included in the board, said plurality of patterns corresponding respectively to a plurality of sub-boards obtained by partitioning said board, and

the apparatus comprises:

an optimizing unit operable to optimize the order of component mounting for any one pattern among the plurality of patterns; and

an allocating unit operable to allocate each of the plurality of patterns to any of the plurality of mounters for component mounting.